CDF Operations Report

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All Experimenter's Meeting
September 18, 2006

CDF Efficiency Numbers

- Lum numbers in the weekly report
  - Delivered: Int. Lum while CLC active
  - Live: DAQ was live
  - Si: DAQ live, Si and all major systems good
- "Usual suspects" for inefficiency = time to bring HV up at the beginning of a store, DAQ deadtime during run, HV trip recovery, software recovery, etc.
- Bottom line...
  - 95% - effective upper limit, zero problems
  - 80% - average efficiency for Run II

Store Summary (Sep 11 - Sep 18)

Store	Start Date	Duration (hours)	CDF Initial Lum 1/(μb-s)	Delivered Lum (1/pb)	Live Lum (1/pb)	Lum w/Si (1/pb)	Comments
4949	10 Sep Sun	31.7	**235.6**	8.63	6.75 78.2%	6.25 72.5%	high init deadtime; Si, plug cal HV trip
4950	12 Sep Tue	28.1	100.2	4.13	3.47 84%	3.45 83.5%	CLC CPU, trigger tests; pcal crate reboot
4952	13 Sep Wed	5.8	173.2	2.60	1.82 70.2%	1.82 70.2%	unusual DAQ problems
4957	14 Sep Thu	20.8	98.7	3.19	2.31 72.3%	1.81 56.6%	database, Si bias scans
4959	15 Sep Fri	26.1	179.0	6.07	5.34 88%	5.32 87.7%	
4960	17 Sep Sun	12.5	197.4	4.73	3.47 73.4%	2.93 61.9%	DAQ; Si HV, bad muon TDC
4962	17 Sep Sun	Running	126.3				
Total		**125.0**		**29.34**	**23.15 78.9%**	**24.44 73.7%**	

Operational Issues

- Luminosity counter crate has faster CPU
  - Same algorithm
  - Faster readout at high lum (smoother measurements)
- Detector repairs during controlled access
  - Wed Evening (20 min)
    - bad forward Cal board replaced
    - TOF (time-of-flight) HV control crate swap
  - Thu Morning (2 hr)
    - minor oscillations in two muon stacks fixed
    - drive system upgrade for west muon steel
    - inspect East Si manifolds (no problems)
- Database problems during store 4957 fixed before next store; thanks to online computing support
- Improved trigger table (runs with lum > 200) fully operational for store 4962

High Lum Trigger Workgroup
(Jan '05 - now)

- Certain triggers were identified as needing work

- 5 triggers (out of 100+) with high rates turned off for luminosity > 200e30

  - Automatically turned back on when lum < 200

- L1 stereo trigger confirmation close to completion

  - Reduced number of fake tracks for muon-based triggers